control loop thus reduces the power control errors caused by the round trip delay between the ground-based central controller and the mobile terminal, which is approximately 0.5 seconds, round trip.

D1

IN THE CLAIMS

Please amend the claims in accordance with the following rewritten claims in clean form. Applicant includes herewith an Attachment for Claim Amendments showing a marked up version of each amended claim.

6. (Amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising the steps of:

D2

using a first control loop to monitor and adjust a power level of said RF transmissions to maintain same within said predetermined range, said first control loop including the steps of:

receiving said RF transmissions at a central controller;

using said central controller to determine a signal-to-noise ratio of said RF transmissions received by said satellite transponder;

comparing said determined signal-to-noise ratio with predetermined signal-to-noise values representing said predetermined range; and

transmitting commands representing changes in said signal-to-noise ratio from said central controller to said space-based transponder, and from said space-based transponder to said mobile platform, to thereby command said mobile platform

to adjust a power level of its said RF transmissions, in real time, to maintain said signal-to-noise ratio of said RF transmissions within said predetermined range.

7. (Amended) The method of claim 6, further comprising using a second control loop between said mobile platform and said satellite transponder to monitor and maintain said signal-to-noise ratio at a previously commanded level, said second control loop including the steps of:

monitoring said signal-to-noise ratio of said RF transmissions between said mobile platform and said satellite transponder; and

in between receipt of said commands from said central controller, adjusting said power level of said RF transmissions to maintain said power level at said previously commanded level determined by said central controller.

8. (Amended) A method of determining a power spectral density (PSD) of an RF signal from a mobile platform having an RF transmitter/receiver directed at a space-based transponder, said method comprising the steps of:

D7 using a central controller to receive and determine a signal-to-noise ratio of said RF signal transponded from said space-based transponder;

assuming that said signal-to-noise ratio of said RF signal received by said central controller is approximately identical to a signal-to-noise ratio of a RF signal at an output of said space-based transponder;

determining an effective isotropic radiated power (EIRP) value of an RF signal directed at said space-based transponder by said mobile platform as a function of said signal-to-noise ratio of said RF signal received by said central controller, and denoting said EIRP value as a target EIRP;

using said target EIRP and a signal pattern of an antenna of said mobile platform to determine an actual EIRP reaching a GEO arc within which said space-based transponder resides; and

using said actual EIRP reaching said GEO arc to determine said PSD of said RF signal being transmitted by said mobile platform.

10. (Amended) The system of claim 9, wherein said system comprises an

D3 open loop system which compares antenna pointing information generated by an onboard reference system with information contained in a prestored table, and modifies said power level of said signal in accordance with said information contained in said prestored table.

11. (Amended) The system of claim 9, further comprising a ground loop controller for measuring a signal quality of said signal when said signal is received from said satellite transponder at a ground station, and for generating a power correction command signal that is transmitted back to the mobile platform via said space-based transponder.

D4

16. (Amended) The system of claim 15, wherein said ground loop controller comprises a closed loop system that compares a signal quality of said signal received at said ground station to a predetermined value and generates said power correction command based on a difference in signal quality between said signal received and said predetermined value.

D5

Please add the following new claims 19-29.

19. (New) A method for determining a power spectral density (PSD) of a radio frequency (RF) signal from a mobile platform having an RF transmitter/receiver directed at a space-based signal relaying device, said method comprising the steps of :

D6

using a central controller to determine an approximate signal-to-noise ratio of an RF signal relayed by said spaced-based transponder from said mobile platform;

using said approximate signal-to-noise ratio to extrapolate an effective isotropic radiated power (EIRP) value of said RF signal when said RF signal was radiated from said mobile platform RF transmitter/receiver; and

using said EIRP value to estimate an actual EIRP of said RF signal received by said space-based transponder.

20. (New) The method of claim 19, further comprising:

using information concerning a pointing direction of an antenna of said mobile platform radiating said RF signal in estimating said actual EIRP.

21. (New) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

forming a first control loop to enable a controller to monitor and determine power level correction commands for commanding said mobile platform to adjust a power level of said RF transmissions transmitted from an antenna of said mobile platform, to thereby maintain a power spectral density (PSD) of said RF transmissions within a predetermined limit; and

forming a second control loop between said space-based signal relaying device and said mobile platform for further enabling changes to said power level of said RF transmissions from said antenna of said mobile platform to further ensure said PSD of said RF transmissions does not exceed said predetermined limit.

22. (New) The method of claim 21, wherein forming said first control loop comprises:

using said controller to receive said RF transmissions: and

comparing said signal-to-noise ratio of said received RF transmissions with predetermined, reference signal-to-noise ratios and using said comparison to generate commands sent by said controller to said space-based transponder to extrapolate said PSD of said RF signal transmitted from said antenna from said signal-to-noise ratio of said RF transmissions.

23. (New) The method of claim 21, wherein said second control loop enables said mobile platform to make changes to a power level of signals transmitted from said mobile platform in between receipt of said power level correction commands from said central controller.

24. (New) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

using a controller to form a first power level control loop for monitoring a power level of signals relayed by said space-based transponder from said mobile platform;

using said controller to generate first power level commands and transmitting said first power level commands to said space-based transponder for subsequent relay back to said mobile platform; and

forming a second power level control loop between said mobile platform and said space-based transponder, wherein said mobile platform is able to implement second power level commands to signals transmitted from its said RF system independently of said receipt of said first power level commands from said controller.

25. (New) The method of claim 24, wherein said controller further monitors an aggregate power spectral density (PSD) of signals received from a plurality of said mobile platforms operating within said predetermined coverage region to ensure that said aggregate PSD does not exceed a predetermined maximum value

26. (New) The method of claim 24, wherein said second power level commands determined via said second power level control loop are implemented inbetween receipt of said first power level commands.

27. (New) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

using a controller to form a first power level control loop for monitoring a power level of said RF transmissions relayed by said space-based transponder from said mobile platform;

using said controller to generate first power level commands and transmitting said first power level commands to said space-based transponder for subsequent relay back to said mobile platform; and

forming a second power level control loop between said mobile platform and said space-based transponder for enabling said mobile platform to monitor a power level of said RF transmissions transmitted from said mobile platform.

28. (New) The method of claim 27, further comprising:

using said controller to generate first power level corrections; and

transmitting said first power level corrections to said space-based transponder.